

ART. VI.—*On the Octoclinis Macleayana* — a new Australian Pine. Described by Dr. FERDINAND MUELLER, Colonial Botanist of Victoria.

[Read before the Institute 2nd March, 1857.]

EVER since the progress of horticulture has been a scale for testing the advancement of civilisation, and therefore since time immemorial, the noble trees of the pine family have been regarded with a favour equally great and deserved. New explorations have added new forms, competing as garden ornaments with those already reared, and thus the interest for these plants has rather increased than diminished.

I would recall to your recollection the veneration of the ancients for the sacred cedar of Lebanon, recall the feelings which have cheered our own hearts in seeing the unaltered grandeur of the pine-forests of our native land at those times when nearly Flora's whole empire is buried under snow; I would recall all the impressions of those who glanced over the abnormal yet stately Kauri pines, the magnificent Deodars, the strange Ginkos, or our incomparable Araucarias, the Bunya Bunya with its colossal fruit; I would remind you lastly of the discovery of Wellingtonia, that giant in the empire of vegetation, now venerated as the highest and imperishable monument of a late hero of the British nation.

I scarcely need apologize when I direct your attention to one indeed of the finest denizens of this tribe of plants, since the generality of them have always been admired for their unfading foliage, their symmetrical and graceful forms, their perfect shade,—admired no less by the philosopher for their association with antiquity and history; esteemed by all for multifarious and universal utility.

I point at present to an ornamental tree, peculiar but to a small area of this country, a tree hitherto unknown to botanists and horticulturists abroad, and interesting particularly to us here as bearing the celebrated name of one of the most zealous promoters of natural sciences in Australia, the name of its discoverer, William S. M'Leay.

The noble tree which forms the subject of this memoir, occurs on forest slopes at Tacking Point of Port Macquarie, and received in Mr. Shepherd's meritorious catalogue of

Sydney Garden plants the name *Leichhardtia Macleayana*.* But in accordance with the unalterable rules in systematic phytology, this appellation, intended to form a renewed generous acknowledgment of the fruitful labours of an immortal man, has to give way to the priority of a more modest yet not less valuable botanical monument erected by the great and venerable Robt. Brown to the memory of my lamented countryman.†

In the newest monography of coniferae, published by the late Professor Endlicher,‡ the view of Mirbel has been adopted, which separates the Sandarach-pines of Australia, (the Cypress-pines of the colonists), principally on account of a six valved fruit, as *Frenela* from the typical Mediterranean *Callitris*, which genus is characterised by a tetramerous strobilus. M'Leay's pine therefore obtains in consonance with these views, likewise generic rank, as it differs from both *Callitris* and *Frenela* in an octamerous fruit; and this generic character is moreover supported habitually by a much stronger, more rigid, and quaternary development of the leaves. This quaternary disposition of the leaves displays beautifully the symmetry in the numerical development of flowers and leaves, reduced to half the number of the fruit divisions, and harmonizes therefore in proportion to the number of these organs in *Callitris*, *Frenela* et *Actinostrobus*, although quaternary leaves are actually without parallel hitherto in Coniferæ, some species excepted of *Ephedra*, a genus otherwise extremely different.

Admitting thus our pine into generic rank, the continental Australian coniferæ exhibit now the following array of genera:—*Frenela*, *Actinostrobus*, *Octoclinis*, *Araucaria*, *Dammara*, *Podocarpus*, *Ephedra*.

Octoclinis.—Flowers monoecious; male ones: a terminal ovate amentum; stamens many, four in a whorl, imbricated; filaments very short, bearing a peltate, scaly round acuminate connectivum, on which the three globose anther-cells are inserted; anther-cells opening lengthwise. Female flowers.....Strobile pyramidate-globose, octogonous, slightly compressed, eight-valved. Valves woody, of unequal

* T. W. Shepherd's Catalogue of Plants cultivated at Sydney, 1851, p. 15.

+ *Leichhardtia Australis*, an aselepiadeous climber, conf. R. Brown's appendix to Sturt's Central Australia, vol. II. p. 81. (1849.)

‡ Endlicher Synopsis Coniferarum, Sangalli, 1847.

length, alternately shorter, all below the apex mucronate. Central columna very short, pyramidal. Seeds numerous, much smaller than the valves, erect, inserted to the lower part and to the base of the valves, a few of the lower ones fertile, the rest sterile, amorphous and wingless. Fertile seeds nearly ovate, somewhat compressed and angulate, on the inner side nearly wingless, on the outer side winged. Indumentum crust-like. Embryo lying in a fleshy albumen, consisting of two cotyledons and a superior cylindrical radicle.

A tree of eastern extra-tropical Australia, with quaternary-verticillate always linear subulate triangular spreading persistent decurrent leaves, without dorsal glands.

Octoclinis Macleayana.—At Tacking Point of Port Macquarie, discovered by W. S. Macleay, Esq.

A tall pyramidal tree with dense foliage, and spreading scattered branches. Branchlets densely foliated, scattered. Leaves compressed, varying in length generally between $\frac{3}{4}$ — $1\frac{1}{2}$ " in their free part, $\frac{1}{2}$ —1" broad, decurring to the next verticill, and alternating with the leaves of it, the middle nerve in age prominent, terminating in a very short mucro. Male amenta, 2—4" long on a very short peduncle, surrounded at the base with four ovate-lanceolate, acuminate short bracts. Connectivum about 1" long. Female flowers as yet unknown. Stroboli at the average one inch long, flat at the base, short stalked. Valves always alternately somewhat, in many instances conspicuously, shorter; their dorsal cusps short green recurved. Seeds, at least the sterile ones, by mutual pressure of indeterminate form; fertile ones nearly $\frac{1}{4}$ of an inch long, with a brown testa; the inner margin wingless, or with a very narrow wing, the wing of the outer margin resting between the valves, sometimes broader than the nucleus, sometimes only below the middle developed.

In a retrospective view over the above characters it will be observed that the genus *Octoclinis* approaches amongst its allied cupressinous genera in foliage next to some *Juniperi*; in disparity of valves and number of seeds to *Frenela*; in number of cotyledons to *Actinostrobis* and *Callistris*; but differs, as already mentioned, from all in quaternary development of flowers and leaves, and in an octamerous fruit.

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